

赤道地域における新旧データを用いた磁場変動

解析の予備的結果

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Preliminary Study of geomagnetic variations in new and old equatorial regions.

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Geomagnetic observations and records made at Japanese observatory were analysed and used in studying various geomagnetic variations in the equatorial regions. The equatorial electrojet (EEJ) regions used are the Huancayo (HUA), Kiritimati Island (KTM) and Pohnpei Island (PON). The results of the analysis showed a regular pattern of variation in $Sq(H)$ in all the three EEJ regions. The amplitude of dH has a diurnal variation which peaks during the day time around local noon in all the EEJ regions. These diurnal variations are attributed to ionospheric plasma irregularities as well as the atmospheric dynamo action. The results of study of variation in the three components H, D, Z of the earth's geomagnetic fields at these regions show some abnormal features in H and Z in January. This was suggested to be a cancellation of EEJ current. D variation was observed as opposed to other older results. This variation in D is suggested to be due different sources. It is a dawn to dusk affair, and not only dusk affair as observed by Maeda et al. (1982). The seasonal variation was observed with equinoctial maximum. This was due to enhanced electron density at equinox. Tarpley (1973) attributed the solstitial weakness of the electrojet to the poleward shift of the northern focus in December and the southern focus in June. Some abnormal quiet days were also observed, which could be likened to the counter electrojet effects. Further future research work is being suggested in these new areas, as this will be useful for more robust interpretations.